IN THE CLAIMS

Please amend claims 1-3, 5, 7, 8, 10, 12-15, 18-24, 27, 29-31, 34-41, 43-45, 48 and 49 as follows:

1. (currently amended) A method comprising a multistep process for recovering one or more monosaccharides from a solution containing at least two monosaccharides ~~a monosaccharide~~ selected from the group consisting of rhamnose, arabinose, xylose and mixtures thereof ~~from a solution containing at least two of said monosaccharides~~ by ~~a multistep process~~ using chromatographic separation comprising at least one step, where a weak~~ly~~ acid cation exchange resin is used for the chromatographic separation.

2. (currently amended) The method of claim 1 comprising feeding the solution ~~containing a monosaccharide selected from the group consisting from rhamnose, arabinose, xylose and mixtures thereof into~~ to a chromatographic column containing a weak~~ly~~ acid cation exchange resin, eluting said chromatographic column with an eluant, and separating and recovering ~~the~~ a rhamnose rich fraction.

3. (currently amended) The method of claim 1 wherein ~~also~~ a strong~~ly~~ acid cation exchange resin is further used for the ~~in a~~ chromatographic separation ~~column~~.

4. (original) The method of claim 1 wherein the multistep process further comprises steps selected from the group consisting of crystallization, filtration, evaporation, precipitation and ion exchange.

5. (currently amended) The method of claim 1 ~~where the~~ wherein said one or more monosaccharides recovered from the solution is rhamnose.

6. (original) The method of claim 5 wherein the rhamnose recovered is L-rhamnose.

7. (currently amended) The method of claim 5 wherein the solution ~~containing rhamnose~~ is a xylose process stream or side stream.

8. (currently amended) The method of claim 5 wherein an arabinose rich fraction is <u>further</u> separated and recovered <u>from the solution</u>.

9. (original) The method of claim 8 wherein the arabinose to be recovered is L-arabinose.

10. (currently amended) The method of claim 5 wherein a xylose rich fraction is <u>further</u> separated and recovered <u>from the solution</u>.

11. (original) The method of claim 10 wherein the xylose to be recovered is D-xylose.

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12. (currently amended) The method of claim 1 wherein the weak~~ly~~ acid cation exchange resin is an acrylic resin.

13. (currently amended) The method of claim 12 wherein the acrylic resin is derived from the group consisting of methyl acrylate, ethyl acrylate, ~~buthyl~~ <u>butyl</u> acrylate, methyl methacrylate, ~~and~~ acrylonitrile, ~~and~~ acrylic acids and mixtures thereof.

14. (currently amended) The method of claim ~~13~~ <u>12</u> wherein the <u>cation of said weak acid cation exchange</u> resin is in the form selected from the group consisting of Na^+, Mg^{2+}, H^+ and Ca^{2+}.

15. (currently amended) The method of claim 14 wherein the <u>cation of said weak acid cation exchange</u> resin is in Na^+ form.

16. (original) The method of claim 12 wherein the resin is crosslinked with divinyl benzene (DVB).

17. (original) The method of claim 16 wherein the crosslinking degree of the resin is 3 to 8 % by weight.

18. (currently amended) The method of claim ~~1~~ 2 wherein the eluant is water.

19. (currently) The method of claim 1 comprising feeding the solution ~~containing rhamnose~~ to a first chromatographic column and then feeding a fraction from the first chromatographic column to a second chromatographic column, both columns containing a weak~~ly~~ acid cation exchange resin.

20. (currently amended) The method of claim 19 comprising feeding a fraction from the second chromatographic column to a third chromatographic column containing a strong~~ly~~ acid cation exchange resin and feeding a fraction from the third chromatographic column to a fourth chromatographic column containing strong~~ly~~ acid cation exchange resin.

A1 cont'd

21. (currently amended) The method of claim 1 comprising feeding the solution ~~containing rhamnose~~ to a first chromatographic column containing a strong~~ly~~ acid cation exchange resin and then feeding a fraction from the first chromatographic column to a second chromatographic column containing a weak~~ly~~ acid cation exchange resin.

22. (currently amended) The method of claim 21 comprising feeding a fraction from the second chromatographic column to a third chromatographic column containing a weak~~ly~~ acid cation exchange resin.

23. (currently amended) The method of claim 19 comprising feeding a fraction from the second chromatographic column to a third chromatographic column containing a strong~~ly~~ acid cation exchange resin.

24. (currently amended) The method of claim 21 comprising feeding a fraction from the second chromatographic column to a third chromatographic column containing a strong~~ly~~ acid cation exchange resin.

25. (original) The method of claim 19 wherein prior to feeding the fraction to the next chromatographic column said fraction is concentrated by evaporation.

26. (original) The method of claim 21 wherein prior to feeding the fraction to the next chromatographic column said fraction is concentrated by evaporation.

27. (currently amended) The method of claim ~~1~~ 2 wherein the temperature of the eluant is between 10 °C and 95 °C.

A1 cont'd

28. (original) The method of claim 27 wherein the temperature of the eluant is between 55 °C and 85 °C.

29. (currently amended) The method of claim 1 wherein the particle size of the weak~~ly~~ acid cation exchange resin is 10 to 2000 μm.

30. (currently amended) The method of claim 29 wherein the particle size of the weak~~ly~~ acid cation exchange resin is 100 to 400 μm.

31. (currently amended) The method of claim 1 wherein the pH of ~~the~~ a feed solution is 1 to 10.

32. (original) The method of claim 31 wherein the pH of the feed solution is 2 to 4.

33. (original) The method of claim 31 wherein the pH of the feed solution is 5 to 10.

34. (currently amended) The method of claim 19 comprising recovering xylose and arabinose from both the first and the second chromatographic column. ~~xylose and arabinose.~~

35. (currently amended) The method of claim 21 comprising recovering xylose and arabinose from both the first and the second chromatographic column. ~~xylose and arabinose.~~

36. (currently amended) The method of claim ~~1~~ 8 comprising isolating arabinose of the arabinose rich fraction by crystallization.

37. (currently amended) The method of claim ~~19~~ 20 comprising recovering rhamnose from the second and/or the third chromatographic column.

38. (currently amended) The method of claim ~~21~~ 22 comprising recovering rhamnose from the second and/or the third chromatographic column.

A1 cont'd

39. (currently amended) The method of claim ~~1~~ 6 comprising further isolating L-rhamnose by crystallization.

40. (currently amended) The method of claim ~~1~~ 6 comprising isolating L-rhamnose in the form of monohydrate.

41. (currently amended) The method of claim ~~1~~ 10 comprising isolating xylose of the xylose rich fraction by crystallization.

42. (original) The method of claim 1 wherein the method is a batch process.

43. (currently amended) The method of claim 1 wherein the solution includes rhamnose and a rhamnose fraction is collected before the other monosaccharides.

44. (currently amended) The method of claim 1 wherein the solution includes rhamnose and a rhamnose fraction is collected after the other monosaccharides.

45. (currently amended) The method of claim 1 wherein the solution includes rhamnose and arabinose and both ~~rhamnose and arabinose~~ are collected together.

46. (original) The method of claim 1 wherein the chromatographic separation method is a simulated moving bed system.

47. (original) The method of claim 46 wherein the simulated moving bed system is sequential.

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48. (currently amended) The method of claim ~~47~~ 46 wherein the simulated moving bed system is continuous.

49. (currently amended) The method of claim 46 wherein at least one column or a part of a column contains a strong~~ly~~ acid cation exchange resin and at least one column contains a weak~~ly~~ acid cation exchange resin.